

ADOPTION OF TECHNOLOGICAL INTERVENTIONS IN BAJRA CULTIVATION

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ABSTRACT

The present study was conducted in two purposively selected villages of Ajmer district of Rajasthan. Twenty marginal and 20 small beneficiary farmers and similar number of non-beneficiary farmers from each village were randomly selected, making the sample of 80 respondents. The findings indicated that the extent of adoption about short duration variety by the beneficiary and non-beneficiary farmers was 88.42 and 39.64 per cent, respectively. Where as, the adoption of balanced nutrients by beneficiary and non-beneficiary bajra growers was found to be 88.19 and 28.33 per cent, respectively. It was further noted that the extent of adoption of bajra interventions was more among beneficiary respondents as compared to non-beneficiary farmers.

INTRODUCTION

In India, the adoption of technology by resource-poor farmers is low. This requires the need to understand the complex farming systems and pattern of decision making by farmers. This requires for participation of farmers in the process of problem diagnosis, identification of technological interventions, and identification of technology for various production systems. It is in this context that a programme captioned Institution-Village Linkage Programme (IVLP) has been started to arrive at appropriate technologies while addressing the above issues. The program was launched in 1995-96. In the first phase there were three centres in Rajasthan and Ajmer was one of them. The present study intended to measure the adoption of interventions related to bajra by the respondents. The study had following specific objectives:

a) To determine the extent of adoption about introduced short duration bajra variety.

b) To assess the extent of adoption about use of nutrients to escape the bajra crop from moisture stress at later stage.

METHODOLOGY

The present study was conducted in Ajmer district of Rajasthan. Ajmer district was selected purposively for the present study, firstly because it was one of the three centres in Rajasthan in which TAR was launched in the first phase of the programme; and secondly because it was the only centre working in rainfed eco-system in the state. For selection of villages, two villages, namely, Saradhana and Mayapur were purposively selected as Ajmer KVK was implementing TAR in these two villages only. The interventions included in the study were related to bajra. The two interventions were (a) introduction of short duration bajra variety, (b) use of nutrients to escape the crop from moisture stress at later stage. From the two selected village, 20 marginal and 20 small beneficiary farmers, and a similar number of non-beneficiary farmers were randomly selected. Thus, the total size

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of the sample consisted of 40 marginal and 40 small farmers making a total of 80 respondents. Data were collected through personal interview with the help of a structured schedule. For analysis of data required statistical measures were used.

RESULTS AND DISCUSSION

Introduction of short duration variety

In order to find out the level of adoption, the respondents were divided into three groups on the basis of mean and standard deviation of adoption score obtained by them. The results are presented in table 1.

It is evident from Table 1 that, 60.00 per cent beneficiary respondents were in medium adoption category and the remaining 40.00 per cent were in high adoption category. The non-beneficiary respondents were equally divided into low and medium adoption categories.

It is evident from Table 1 that 65.00 per cent marginal and 55.00 per cent small beneficiary farmers had medium adoption level. While the remaining 35.00 per cent marginal and 45.00 per cent small beneficiary farmers had high adoption level. In case of non-beneficiaries, 35.00 per cent marginal and 65.00 per cent small farmers had medium adoption level. Whereas, the remaining 65.00 per cent marginal and 35.00 per cent small non-beneficiary farmers had

low adoption level. The findings are similar to the findings of Singh and Patel (1988) who concluded that majority of contact farmers belonged to high level of adoption, while majority of non-contact farmers belonged to medium level of adoption.

The extent of adoption for beneficiary and non-beneficiary respondents was measured for seven aspects of short duration bajra variety. Efforts were made to include all the aspects related to seed and sowing practices. The scores obtained by respondents were converted into mean per cent scores and the data have been presented in Table 2.

The data in Table 2, highlighted that 'sowing of HBB-67 variety of bajra' was the highest adopted aspect by beneficiary respondents. The calculated adoption index for this aspect was 93.33 per cent and was accorded first rank. This was followed by the 'practice of gap filling and thinning' and 'recommended seed rate in bajra'. The extent of adoption of these two aspects were 92.50 and 91.66 per cent, respectively. 'Maintenance of plant to plant spacing' and 'optimum time of sowing bajra' were the lesser adopted aspects in this intervention. The calculated adoption score for the above two aspects was 80.33 per cent.

Further appraisal of the Table depicts that, in case of non-beneficiaries 'optimum time of sowing bajra' by 66.66 per cent farmers

Table 1 : Distribution of respondents according to level of adoption of short duration bajra variety HBB-67 N = 80

Category	Beneficiaries						Non-beneficiaries					
	MF		SF		Total		MF		SF		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
Low (Score below 7.61)	0	0.00	0	0.00	0	0.00	13	65.00	7	35.00	20	50.00
Medium (Score between 7.61 - 19.29)	13	65.00	11	55.00	24	60.00	7	35.00	13	65.00	20	50.00
High (Score above 19.29)	7	35.00	9	45.00	16	40.00	0	0.00	0	0.00	0	0.00
Overall	20	100.00	20	100.00	40	100.00	20	100.00	20	100.00	40	100.00

MF - Marginal farmers
F - Frequency

SF - Small farmers
% - Percentage

Table 2: Extent of adoption of short duration bajra variety by the respondents

N = 80

Aspects	Beneficiaries						Non-beneficiaries					
	MF		SF		Total		MF		SF		Total	
	Per Cent	Rank	Per Cent	Rank	Per Cent	Rank	Per Cent	Rank	Per Cent	Rank	Per Cent	Rank
1. Sowing of HBB-67 variety	90.00	2	96.66	1	93.33	1	6.66	7	23.33	7	15.00	7
2. Optimum time for sowing	78.00	6	83.33	7	80.83	6.5	66.66	1	66.66	1	66.66	1
3. Recommended seed rate	90.00	2	93.33	4	91.66	3	48.33	2	55.00	2	51.66	2
4. Line sowing	88.33	4	91.66	5	90.00	4.5	23.33	5.5	38.33	6	32.50	5
5. Recommended row to row distance	85.00	5	95.00	2.5	90.00	4.5	26.66	4	43.33	4	30.83	6
6. Maintaining plant to plant spacing	75.00	7	86.66	6	80.83	6.5	23.33	5.5	41.66	5	35.00	4
7. Practice of gap filling and thinning	90.00	2	95.00	2.5	92.50	2	40.00	3	51.66	3	45.83	3
Overall	85.24		91.67		88.42		34.04		45.24		39.64	

MF - Marginal farmers

SF - Small farmers

was the highest adopted aspect and it was ranked first. This was followed by the 'recommended seed rate for bajra' with an adoption index of 51.66 per cent and practice of gap filling and thinning' with an adoption index of 45.83 per cent. 'Sowing of HBB-67 variety of bajra' (15.00 per cent) was least adopted aspect by non-beneficiaries in the study area.

From the above discussion it is interesting to note that, in case of beneficiaries, adoption gap was minimum (6.66 per cent) for the aspect of 'sowing of HBB-67'. Whereas, the maximum adoption gap of 19.67 per cent was found in the aspects like 'maintenance of plant to plant spacing' and 'optimum time of sowing'. These results might be due to more contact of beneficiaries with experts. In the case of non-beneficiaries, adoption gap ranged from 33.34 to 85.00 per cent in all the aspects related to short duration bajra variety HBB-67.

The findings are similar to the findings of Chandargi *et al.* (1991) who reported that more than 80 per cent of jowar growers had adopted the practices such as varieties, seed rate and time of sowing; whereas, the

practices like spacing, compost manuring and chemical fertilizers were adopted in full, by less than 80 per cent of farmers. Pest and disease control was not adopted by any farmers.

Use of balanced nutrients in bajra to escape the crop from moisture stress at later stage

To get an overall view of adoption level, the bajra growers were grouped into three strata, low adoption group (below 4.28), medium adoption group (4.28 to 16.72) and high adoption group (above 16.72). This stratification was based on the calculated mean and standard deviation of adoption scores obtained by the respondents.

Table 3 makes it clear that in case of beneficiaries, out of the total 21 beneficiary respondents in medium adoption category, 14 and 7 respondents were marginal and small farmers, respectively. In high adoption category, in all, there were 19 beneficiary respondents out of which six were marginal and 13 were small farmers. There were no beneficiaries in low adoption category. The Table 3 also depicts that for non-

Table 3 : Distribution of respondents on the basis of their level of adoption about use of nutrients in bajra

N=80

Category	Beneficiaries						Non-beneficiaries					
	MF		SF		Total		MF		SF		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
Low (Score below 4.28)	0	0.00	0	0.00	0	0.00	16	80.00	12	60.00	28	70.00
Medium (Score between 4.28 - 16.72)	14	70.00	7	35.00	21	52.50	4	20.00	8	40.00	10	30.00
High (Score above 16.72)	6	30.00	13	65.00	19	47.50	0	0.00	0	0.00	0	0.00
Overall	20	100.00	20	100.00	40	100.00	20	100.00	20	100.00	40	100.00

MF - Marginal farmers

SF - Small farmers

F - Frequency

% - Percentage

beneficiaries, there were 28 respondents in low adoption category of which 16 were marginal and 12 were small farmers. While in medium adoption category also, there were in all 12 respondents of which 4 were marginal and 8 were small farmers. There were no non-beneficiaries in high adoption category.

The findings are similar to Soni (1992) who revealed that extent of adoption was high in bajra cultivation. There were 20 to 100 per cent trainees that fully adopted the bajra cultivation.

The aspect-wise extent of adoption for beneficiary and non-beneficiary respondents about use of balanced nutrients in bajra crop has been depicted in Table 4.

Critical examination of Table 4 reveals that 'harvesting of crop at proper stage of maturity' had highest adoption index for both beneficiary and non-beneficiary respondents. The calculated adoption index for beneficiaries was 96.66 per cent and that of non-beneficiaries was 90.83 per cent. This aspect was ranked first for both the categories of respondents.

This was followed by 'recommended method of fertilizer application', 'application of fertilizer at the time of sowing', 'use of recommended doses of nitrogenous fertilizer' and 'appropriate depth of fertilizer application' for beneficiary bajra growers. The extent of adoption for all these aspects were 94.16, 92.50, 84.16 and 83.33 per cent, respectively.

Table 4: Extent of adoption regarding use of balanced nutrients by bajra growers

N=80

Aspects	Beneficiaries						Non-beneficiaries					
	MF		SF		Total		MF		SF		Total	
	Per Cent	Rank	Per Cent	Rank	Per Cent	Rank	Per Cent	Rank	Per Cent	Rank	Per Cent	Rank
Application of fertilizer at the time of sowing	91.66	2.5	93.33	3	92.50	3	16.66	2	30.00	2	23.33	2
Use of recommended doses of nitrogenous fertilizer	76.66	4.5	91.66	4	84.16	4	11.66	3	25.00	3	18.33	3
Phosphatic fertilizer application	73.33	6	83.33	6	78.33	6	3.33	6	13.33	6	8.33	6
Recommended method of fertilizer application	91.66	2.5	96.66	1.5	94.16	2	10.00	4	23.33	4	16.66	4
Appropriate depth of fertilizer application	76.66	4.5	90.00	5	83.33	5	6.66	5	18.33	5	12.50	5
Harvesting of crop at proper stage of maturity	96.66	1	96.66	1.5	96.66	1	85.00	1	96.66	1	90.83	1
Overall	84.44		91.94		88.19		22.22		34.44		28.33	

MF - Marginal farmers

SF - Small farmers

In case of non-beneficiaries, the calculated adoption index for 'application of fertilizer at the time of sowing', 'use of recommended dose of nitrogenous fertilizers', 'recommended method of fertilizer application' and 'appropriate depth of fertilizer application' were 23.33, 18.33, 16.66 and 12.50 per cent, respectively. Further, it was found that both beneficiaries and non-beneficiaries had minimum extent of adoption for the aspect of 'application of phosphatic fertilizer'. This aspect with a mean per cent score of 78.33 for beneficiaries and 8.33 for non-beneficiaries was accorded sixth rank by both the categories.

The range for extent of adoption of different aspects in use of nutrients for different categories was very varied. This range for marginal beneficiary respondents was 73.33 to 96.66 per cent and that of small beneficiary respondents was 83.33 to 96.66 per cent. Whereas, in the case of non-beneficiary marginal respondents it was 3.33 to 85.00 per cent and for small non-beneficiary respondents it was between 13.33 to 96.66 per cent.

The above findings were well supported by findings of Somsundaran (1976) who concluded that out of the three fertilizers (NPK), nitrogenous fertilizers were applied by majority of adopters followed by phosphatic fertilizer. The potassic fertilizer was least applied.

CONCLUSION

From the above results it can be concluded that the adoption of interventions was more among beneficiary respondents as compared to non-beneficiary respondents. This difference between beneficiaries and non-beneficiaries about adoption of interventions in the study area was not unexpected. It may be due to the fact that beneficiary respondents being in continuous contact with the KVK personnel might have acquired sufficient skills pertaining to the interventions related to agronomic crops. Thus, they are more likely to practice the acquired skills on their fields.

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